

REMARKS

The Office Action dated June 10, 2004 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 11, 20 and 21 were amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Support for the amendments may be found throughout the specification, for example, on page 7, lines 4-5, page 9, lines 12-27, and page 13, lines 36 to page 19, line 2. Thus, claims 1-6, 8-16 and 18-21 presently are pending in the subject application and are respectfully submitted for consideration.

Applicants note that the drawings filed on April 6, 2004, have been accepted by the Examiner.

Claims 1-3, 10-13 and 20-21 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,728,540 (*DeSantis et al.*) in view of World Intellectual Property Organization International Publication No. WO 98/15150 (*Bodin*). The Office Action took the position that *DeSantis* taught all the features of the independent claims except that the bursts sent by a mobile station and relating to the handover signaling are measured at the base transceiver station, the measurement results are compared with a pre-established criterion, and handover is completed only when the criterion is met. The Office Action then took the position that *Bodin* provided the features of the pending claims missing from *DeSantis*. Applicants respectfully submit

that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claim 1, upon which claims 2, 3 and 10 are dependent, presently recites a handover-method in a cellular radio system including base transceiver stations and mobile stations. The cellular radio system uses at least two frequency ranges, with one of the frequency ranges sending a broadcast signal. The method includes transmitting by each base transceiver station a broadcast signal intended for all mobile stations in a first frequency range. The method also includes starting handover to a second frequency range on which a broadcast signal is not sent. The method also includes supplying a criterion for a conditional handover to a base transceiver station relating to the second frequency range. The method also includes measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range. The method also includes comparing the measurement results with the criterion. The method also includes completing the handover to the second frequency range when the criterion is met.

Claim 11, upon which claims 12 and 13 are dependent, presently recites a handover-method in a cellular radio system including base transceiver stations and mobile stations. The method includes starting handover from an initial channel, on which a broadcast signal is sent, to a target channel, on which a broadcast signal is not sent. The method also includes supplying a criterion for a conditional handover to a base transceiver station relating to the target channel. The method also includes measuring

bursts transmitted by the mobile station in the target channel and relating to the handover signaling at the base transceiver station relating to the target channel. The method also includes comparing the measurement results with the criterion. The method also includes completing the handover to the target channel when the criterion is met.

Claim 20 presently recites a mobile communication system including base transceiver stations in mobile stations. The mobile communications system is configured to start a conditional handover from a first frequency range, on which a broadcast signal is sent, and to supply a criterion for the conditional handover to a base transceiver station relating to a second frequency range, on which a broadcast signal is not sent. The mobile communications system also is configured to measure bursts sent by a mobile station relating to a handover signal at the base transceiver station relating to the second frequency range. The mobile communications system also is configured to compare the measurement results with the criterion. The mobile communications system also is configured to interrupt the handover, when the mobile station signal as a result of the comparison does not meet the criterion.

Claim 21 presently recites a base transceiver station including a handover-signaling unit for controlling the handover signaling, the base transceiver station relating to a second frequency range, on which a broadcast signal is not sent. The base transceiver station includes receiving means for receiving a criterion for a conditional handover from a base transceiver station sending a broadcast signal in a first frequency range. The base transceiver station also includes measuring means for measuring bursts

sent by a mobile station in the second frequency range and relating to the handover signaling. The base transceiver station also includes comparison means for comparing measurement results of the measuring means with the criterion for the conditional handover, whereby as a result of the comparison, a control signal is obtained for the handover-signaling unit.

As discussed in the specification, examples of the present invention enable an optimal way of handling a handover in a system where at least two frequency ranges are used, but only one of the frequency ranges is sending a broadcast signal. A criterion is supplied for a conditional handover to a base transceiver station relating to a second frequency range on which a broadcast signal is not sent. Bursts sent by the mobile station in the second frequency range and relating to the handover signaling are measured at the base transceiver station relating to the second frequency range. Thus, in examples of the present invention, the handover-method saves resources of a cellular radio system, especially in systems of several frequency bands, wherein there is only one broadcast channel. It is respectfully submitted that the cited references, either alone or in combination, fail to disclose or suggest all the elements of any of the presently pending claims. Therefore, the cited references fail to provide the critical and unobvious advantages discussed above.

DeSantis relates to assisted handover in a wireless communications system. *DeSantis* describes transmitting information on a set of potential handover candidates to a mobile from a base station in a current cell. The set of handover candidates for a given

mobile and the current cell is determined based on stored adjacency information regarding the cells that are adjacent to the current cell. The adjacency information is stored after an initial system configuration, based on the actual physical layout of the cells, and is altered during system operation to reflect the success or failure of particular attempted handovers. According to *DeSantis*, a base station in each cell broadcasts on the downlink frequency-timeslot currently in use, one frequency-timeslot location being used in the four cells adjacent to it. Thus, *DeSantis* describes improving handover using store cell adjacency information regarding the layout of the cells in the system. *DeSantis*, however, does not disclose or suggest the feature of starting handover to a second frequency on which a broadcast signal is not sent, supplying a criterion for a conditional handover to a base transceiver station relating to the second frequency range, and measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range.

Bodin relates to a device and method in a cellular mobile telephone system. *Bodin* describes determining the geographic position of a mobile station. The distance between the mobile station and a radio base station is estimated from the propagation delay from access bursts sent by the mobile station. The access delay is measured by the arrived bursts. The measured access delay is proportional to the propagation delay and also to the distance to the mobile station. *Bodin* describes sending a number of access bursts over the dedicated control channel DCCH. *Bodin*, however, does not disclose or suggest

the feature of starting handover to a second frequency range on which a broadcast signal is not sent or measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range.

In contrast, claim 1 recites "starting handover to a second frequency range on which a broadcast signal is not sent, supplying a criterion for a conditional handover to a base transceiver station relating to the second frequency range," and "measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range." Further, claim 11 recites "starting handover from an initial channel, on which a broadcast signal is sent, to a target channel, on which a broadcast signal is not sent, supplying a criterion for a conditional handover to a base transceiver station relating to the target channel," and "measuring bursts transmitted by the mobile station in the target channel and relating to the handover signaling at the base transceiver station relating to the target channel." Independent claims 20 and 21 also recite some of the features of claims 1 and 11, discussed above. Applicants respectfully submit that the cited references, either alone or in combination, do not disclose or suggest at least these features of the pending claims.

Applicants submit that neither *DeSantis* nor *Bodin* disclose or suggest at least these features using two frequency ranges with one of the frequency ranges sending a broadcast signal. Further, the cited references, either alone or in combination, do not disclose or suggest performing a conditional handover to the frequency range on which a

broadcast signal is not sent. Instead, *DeSantis* describes broadcasting on one frequency-timeslot location to the adjacent cells. *Bodin* describes sending a number of access bursts over a dedicated control channel. These aspects of the cited references do not disclose or suggest at least two frequency ranges, and therefore, do not disclose or suggest starting handover to a second frequency range on which a broadcast signal is not sent. Thus, the cited references do not disclose or suggest measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range.

For at least these reasons, applicants submit that the cited references, either alone or in combination, do not disclose or suggest all the features of independent claims 1, 11, 20 and 21. Those claims depending from claims 1 and 11, also are not disclosed or suggested at least for the reasons given above. Applicants respectfully request that the obviousness rejection of claims 1-3, 10-13 and 20-21 be withdrawn.

Claims 4-5 and 15 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *DeSantis* in view of *Bodin* and further in view of U.S. Patent No. 5,200,957 (*Dahlin*). The Office Action took the position that *DeSantis* and *Bodin* do not teach that the signal level of the mobile station's burst is measured. The Office Action then took the position that *Dahlin* provided these features missing from the claims. Applicants respectfully submit that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claims 1 and 11 are summarized above. Claims 4-5 and 14 depend directly or indirectly from independent claims 1 and 11, respectively.

Dahlin relates to a mobile assisted handoff. *Dahlin* describes timeslot identifier codes that are transmitted by bursts in timeslots and frames of radio channels used for time division communication channels. The timeslot identifier codes are indicative of burst timeslots in a frame but not of a transmitter or receiver entity or radio channel. The timeslot identifier codes are used for burst synchronization and determining the signal strength to be measured for the purpose of possible handoff. *Dahlin*, however, does not disclose or suggest the features of claims 1 and 11 missing from *DeSantis* and *Bodin*, as noted above.

Applicants submit that *Dahlin* does not disclose or suggest starting handover to a second frequency range on which a broadcast signal is not sent, supplying a criterion for a conditional handover to a base transceiver station relating to the second frequency range, and measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range. *Dahlin* does not disclose or suggest using a second frequency range in performing its handover process. Applicants submit that the timeslot identifier codes described in *Dahlin* do not disclose or suggest at least these features of independent claims 1 and 11. Thus, the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claims 4-5 and 14 depend from independent claims 1 and 11. As noted above, claims 1 and 11 are not rendered obvious by the cited references, either alone or in combination. If an independent claim is non-obvious, then any claim depending therefrom also is non-obvious. MPEP 2143.03. Thus, for at least these reasons, applicants submit that claims 4-5 and 14 are not rendered obvious. Applicants respectfully request that the obviousness rejection of claims 4-5 and 14 be withdrawn.

Claims 6 and 16 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *DeSantis* in view of *Bodin* and further in view of U.S. Patent No. 6,285,875 (*Alajoki et al.*) The Office Action took the position that *DeSantis* and *Bodin* do not teach that the criterion is transmitted to the base transceiver station in connection to the channel assignment signaling. The Office Action then took the position that *Alajoki* provided these features missing from *DeSantis* and *Bodin*. Applicants respectfully submit that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claims 1 and 11 are summarized above. Claims 6 and 16 depend from claims 1 and 11, respectively.

Alajoki relates to a traffic management system for use in mobile communications network. *Alajoki* describes a traffic management system that reads TT files obtained from mobile services switching centers and processes information included in the records of the files. The highest level represents the operator's entire service area, and the lowest level represents a cell. On each level, traffic intensity is displayed with grades of color,

such that the more traffic, then the stronger the color. The display is updated automatically as the message service center provides the TT data. *Alajoki*, however, does not disclose or suggest the features of claims 1 and 11 missing from *DeSantis* and *Bodin* as noted above.

Applicants submit that *Alajoki* does not disclose or suggest starting handover to a second frequency range on which a broadcast signal is sent, supplying a criterion for a conditional handover to a base transceiver station relating to the second frequency range, and measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range. As with the other cited references, *Alajoki* does not disclose or suggest using a second frequency range and performing handover processes. The load monitoring described by *Alajoki* distributes traffic between an overloaded cell and enabling cells. *Alajoki*, however, does not disclose or suggest starting handover to a second frequency range on which a broadcast signal is not sent. Thus, applicants submit that the cited references, either alone or in combination, do not disclose or suggest all the features of independent claims 1 and 11.

Claims 6 and 16 depend from independent claims 1 and 11. As noted above, independent claims 1 and 11 are not rendered obvious by the cited references, either alone or in combination. If an independent claim is non-obvious, then any claim dependent therefrom also is non-obvious. MPEP 2143.03. Thus, applicants respectfully

submit that claims 6 and 16 are not rendered obvious. Applicants respectfully request that the obviousness rejection of claims 6 and 16 be withdrawn.

Claims 8-9 and 18-19 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *DeSantis* in view of *Bodin* and further in view of U.S. Patent No. 5,878,349 (*Dufour et al.*) The Office Action took the position that *DeSantis* and *Bodin* do not teach that assigned for the burst of connection requests set-up and signaling received from the mobile station are measured at the base transceiver station. The Office Action then took the position that *Dufour* provided those features missing from *DeSantis* and *Bodin*. Applicants respectfully submit that the cited references, either alone or in combination, do not disclose or suggest all the features of any of the presently pending claims.

Claims 1 and 11 are summarized above. Claims 8-9 and 18-19 depend from independent claims 1 and 11, respectively.

Dufour relates to call set-up on an 800 MHz analog voice channel from 1900 MHz digital control channel. *Dufour* describes a first cluster of base stations serving a first group of mobile stations over digital radio frequency channels in a second cluster of base stations, co-located with the first cluster, for serving a second group of mobile stations over analog radio frequency channels. Some of the base stations in the second cluster have cells that overlap with cells of the first cluster. Thus, *Dufour* describes setting up a call on an analog voice channel of a base station of the second cluster while a mobile station is served on a digital control channel of a base station in the first cluster. *Dufour*,

however, does not disclose or suggest those features of claims 1 and 11 missing from *DeSantis* and *Bodin*.

Applicants submit that *Dufour* does not disclose or suggest starting handover to a second frequency range on which a broadcast signal is not sent, supplying a criterion for a conditional handover to a base transceiver station relating to the second frequency range, and measuring bursts sent by a mobile station in the second frequency range and relating to the handover signaling at the base transceiver station relating to the second frequency range. *Dufour* does not use at least two frequencies in setting up the call from the analog voice channel to the digital control channel. Further, *Dufour* does not disclose or suggest starting handover on a second frequency range between the first cluster and the second cluster. Thus, *Dufour* does not disclose or suggest those features of claims 1 and 11 missing from *DeSantis* and *Bodin*.

Claims 8-9 and 18-19 depend from independent claims 1 and 11. As noted above, claims 1 and 11 are not rendered obvious by the cited references, either alone or in combination. If an independent claim is non-obvious, then any claim depending therefrom is non-obvious. MPEP 2143.03. Thus, applicants respectfully submit that claims 8-9 and 18-19 are not rendered obvious, and respectfully request that the obviousness rejection of claims 8-9 and 18-19 be withdrawn.

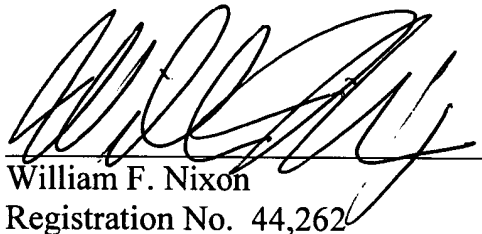
It is submitted that each of claims 1-6, 8-16 and 19-21 recite subject matter that is neither disclosed nor suggested by the cited references, either alone or in combination. It

is therefore respectfully requested that all of claims 1-6, 8-16 and 19-21 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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